ICF International / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Task Order Manager (TOM) RF
Quality Assurance (QA) Program, MTS-3

FROM: Doug Lindelof, Data Review Task Manager
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: EP-W-06-041
Technical Direction Form No.: 00105074 Amendment 3

DATE: August 22, 2007

SUBJECT: Review of Analytical Data, Tier 2

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Omega Chem OU2
Site Account No.:	09 BC LA02
CERCLIS ID No.:	CAD042245001
Case No.:	None
SDG Nos.:	IQB2781, IQB2946, IQB3127, IQC0134, IQC0444, IQC0600, and IQC0780
Laboratory:	TestAmerica Analytical Testing Corp.
Analysis:	Hexavalent Chromium
Samples:	39 Water Samples (see Case Summary)
Collection Dates:	February 26, 27, 28, March 1, 5, 6, and 7, 2007
Reviewer:	Stan Kott, ESAT/Laboratory Data Consultants

This report has been reviewed by the EPA TOM for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.: None
SDG Nos.: IQB2781 - IQC0780
Site: Omega Chem OU2
Laboratory: TestAmerica Analytical Testing Corp.
Reviewer: Stan Kott, ESAT/LDC
Date: August 22, 2007

I. CASE SUMMARY

Sample Information

SDG IQB2781 Samples:	OC2-MW4C-W-0-456, OC2-MW4B-W-0-458, OC2-MW4A-W-0-459, OC2-MW5-W-0-460, and OC2-MW15-W-0-462
SDG IQB2946 Samples:	OC2-MW18C-W-0-463, OC2-MW18B-W-0-464, OC2-MW18A-W-0-466, OC2-MW18A-W-1-467, and OC2-MW7-W-0-468
SDG IQB3127 Samples:	OC2-MW8D-W-0-469, OC2-MW8B-W-0-470, OC2-MW8C-W-0-471, OC2-MW8A-W-0-473, and OC2-MW6-W-0-474
SDG IQC0134 Samples:	OC2-MW16C-W-0-475, OC2-MW16B-W-0-476, OC2-MW16A-W-0-477, OC2-MW22-W-0-479, OC2-MW21-W-0-480, and OC2-MW21-W-5-480
SDG IQC0444 Samples:	OC2-MW17C-W-0-487, OC2-MW17B-W-0-488, OC2-MW17A-W-0-489, OC2-MW19-W-0-490, OC2-MW2-W-0-492, and OC2-MW2-W-1-493
SDG IQC0600 Samples:	OC2-MW3-W-0-494, OC2-MW13B-W-0-495, OC2-MW11-W-0-496, OC2-MW10-W-0-498, OC2-MW12-W-0-499, and OC2-MW14-W-0-500
SDG IQC0780 Samples:	OC2-MW1B-W-0-501, OC2-MW1A-W-0-502, OC2-MW1A-W-5-502, OC2-MW23D-W-0-503, OC2-MW23B-W-0-504, and OC2-MW23C-W-0-505
Concentration and Matrix:	Low Concentration Water
Analysis:	Hexavalent Chromium
SOW:	EPA Method 218.6
Collection Date:	February 26, 27, 28, March 1, 5, 6, and 7, 2007
Sample Receipt Date:	February 26, 27, 28, March 1, 5, 6, and 7, 2007
Preparation Date:	February 26, 27, March 1, 5, 6, and 7, 2007
Analysis Date:	February 26, 27, March 1, 5, 6, 7, and 8, 2007

Field QC

Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	OC2-MW18A-W-0-466 and OC2-MW18A-W-1-467
Field Duplicates (D2):	OC2-MW2-W-0-492 and OC2-MW2-W-1-493

Laboratory QC

Method Blanks: 7B26127-BLK1, 7B27059-BLK1, 7C01049-BLK1, 7C01147-BLK1, 7C05127-BLK1, 7C06150-BLK1, 7C07085-BLK1, and 7C08101-BLK1

Associated Samples: Samples listed above

Matrix Spike (MS): IQB2786-04MS1, OC2-MW5-W-0-460MS1, OC2-MW6-W-0-474MS1, OC2-MW16C-W-0-475MS1, OC2-MW17A-W-0-489MS1, OC2-MW3-W-0-494MS1, IQC0721-01MS1, and IQC0945-01MS1

Matrix Spike Duplicate (MSD): IQB2786-04MSD1, OC2-MW5-W-0-460MSD1, OC2-MW6-W-0-474MSD1, OC2-MW16C-W-0-475MSD1, OC2-MW17A-W-0-489MSD1, OC2-MW3-W-0-494MSD1, IQC0721-01MSD1, and IQC0945-01MSD1

Analysis: Hexavalent Chromium

Analyte	Sample Preparation Date	Analysis Date
Hexavalent Chromium	February 26, 27, March 1, 5, 6, and 7, 2007	February 26, 27, March 1, 5, 6, 7, and 8, 2007

Sampling Issues

The Chain of Custody (COC) record forms for all SDGs, except IQC0134, did not specify a sample to be used for laboratory quality control (QC). As a result, the laboratory selected a sample for QC analysis. The effect on data quality is not known.

Additional Comments

As directed by the TOM, a Tier 2 validation (i.e., review all QC results and calibrations, minus calculation check) was performed. A Table 1A is not requested.

For the calibration curve established on February 20, 2007, the calculated percent difference (%D) for calibration standards 0.00030 mg/L and 0.001 mg/L are +78 %D and +21 %D, respectively, and exceed the 10% limit. The 10% limit was derived from the ±10% limit used in Method 218.6 to determine the linear dynamic range upper limit. The high %D indicates that the calibration may not be linear at the low end of the curve. Since the analytical method does not require analysis of a reporting limit (RL) standard to confirm linearity of the calibration curve at the 0.00030 mg/L RL, results less than 0.005 mg/L may have a high bias. Affected samples are: OC2-MW18C-W-0-463, OC2-MW8D-W-0-469, OC2-MW16C-W-0-475, OC2-MW22-W-0-479, OC2-MW21-W-0-480, and OC2-MW21-W-5-480.

Hexavalent chromium samples that exceed the instrument calibration curve were analyzed at the following dilutions:
5-fold for OC2-MW1A-W-0-502 and OC2-MW1A-W-5-502;
10-fold for OC2-MW8A-W-0-473 and OC2-MW6-W-0-474.
No adverse effect on data quality is expected.

Definitions of data qualifiers are listed in Table 1B.

This report was prepared in accordance with the following documents:

- Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*; and
- *USEPA Method 218.6, Determination of Dissolved Hexavalent Chromium in Drinking Water, Groundwater, and Industrial Wastewater Effluents by Ion Chromatography*, Revision 3.3, May 1994.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	Parameter	Acceptable	Comment
1.	Data Completeness	Yes	
2.	Sample Preservation and Holding Times	No	A
3.	Calibration	Yes	
	a. Initial		
	b. Initial and Continuing Calibration Verification		
4.	Blanks	No	B
5.	Laboratory Control Sample (LCS)	Yes	
6.	Duplicate Sample Analysis	Yes	
7.	Matrix Spike Sample Analysis	No	C
8.	Field Duplicate Sample Analysis	Yes	
9.	Sample Quantitation	Yes	
10.	Overall Assessment	Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. The following result is estimated and should be flagged "J" because the technical holding time was exceeded.

- Hexavalent chromium in sample OC2-MW1A-W-5-502 (SDG IQC0780)

The method 24 hour technical holding time for water was exceeded as shown below.

Sample Number	Date Collected	Time Collected	Date Analyzed	Time Analyzed	Exceeded (HH:MM)
OC2-MW1A-W-5-502	3/7/07	08:45 AM	3/8/07	11:53 PM	15:08

The 0.11 mg/L result for sample OC2-MW1A-W-5-502 may be biased low.

B. The following result is qualified and estimated high and should be flagged "J+" due to continuing calibration blank (CCB) contamination.

- Hexavalent chromium in sample OC2-MW11-W-0-496 (SDG IQC0600)

Sample results greater than the MDL are qualified and estimated high (J+) unless the concentration of the analyte in the sample exceeds 5 times the amount in any associated blank. The 0.0006 mg/L result for hexavalent chromium in the CCB exceeds the 0.0003 mg/L reporting limit (RL).

A continuing calibration blank (CCB) consists of deionized, distilled water and reagents. It is analyzed after the continuing calibration verification (CCV) standard, at a frequency of every 10 samples and at the end of the analytical run to monitor analyte carry-over.

C. The following result is estimated and should be flagged "J" because the matrix spike duplicate recovery result is outside laboratory QC limits.

- Hexavalent chromium in sample OC2-MW16C-W-0-475 (SDG IQC0134)

Matrix spike recovery for hexavalent chromium in QC sample OC2-MW16C-W-0-475MSD1 did not meet the laboratory's 90-110% criterion for accuracy. The percent recovery and possible percent bias for hexavalent chromium are presented below and are based on an ideal recovery of 100%.

Analyte	% Recovery	% Bias
Hexavalent chromium	87	-13

Results above the MDL are considered quantitatively uncertain. The result reported for hexavalent chromium in sample OC2-MW16C-W-0-475 may be biased low.

The matrix spike sample analysis provides information about the effect of the sample matrix on the digestion and measurement methodology.

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, October 2004.

U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.